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ENGINEERING & CONSTRUCTION LTD.

COPY

May 24, 2001

Canadian Intellectual Property Office
Patent Office
Place du Portage I
50 Victoria Street, Hull, Quebec
K1A 0C9

Attention: Mr. P Fitzner, Senior Patent Examiner

Re: Patent application No. 2,302,795 entitled "Building Wall Humidity Control System"

Dear Sir:

In response to your letter of April 24/01, this is to inform you that in our opinion the objections that you have raised to the above patent application are not valid. It appears that your objections are primarily based on possible conflicts with other patents namely: Canadian application no. 2,148,626 by Fitzgibbon and United States patent no. 4,393,633 by Charniga. We do not believe that there are any significant conflicts and our reasons are as follows:

1. The first and most obvious difference between our "Building Wall Humidity Control System" and the above mentioned patents is design intent. Our active system is designed to *measure, control and manage* specific moisture related parameters (such as relative humidity (R/H) of the air and/or moisture content (M/C) of the wood itself) in wood frame cavities. By comparison, both Fitzgibbon and Charniga propose strictly passive systems that measure, control or manage nothing in particular. In Fitzgibbon's case, there is only a vague reference to possible changes in cavity air temperature and in the concentration of radon gas. However, since nothing of the kind is actually measured or controlled, the net effect is literally unknown. What effect then this system would have on unidentified and yet equally unmeasured and uncontrolled parameters such as R/H and M/C is even more ambiguous. Fitzgibbon does identify the possibility of using a "pump" but also clearly states "this is not necessary". Charniga's proposal is even more vague. He does not identify any parameters whatsoever and hopes that by simply allowing "air circulation" a "weather and temperature barrier from the exterior" will be created which "also stops sound transmission". Again, what effect this will have on R/H and M/C is obviously not even considered. In essence then, both of these proposals take an over simplified design approach whereby uncontrolled (exterior or interior) air is simply allowed to move unimpeded in the wall cavities and hopefully some good will come of it. Exactly what good and how much of it will be achieved is anyone's guess.

2. Lack of control can also lead to serious (albeit unintentional) design flaws and consequences. In Fitzgibbon's case, the air used is uncontrolled exterior air which begs the question: what if this exterior air is relatively warm and has an R/H of approximately 100% as it often is the case here on the West Coast of British Columbia ? The consequence of this design flaw is of course to *promote* mould growth not inhibit it. Our system uses controlled interior air at all times to avoid precisely this kind of undesirable condition. In Charniga's case, he uses interior air but venting is to the interior space ! In essence then, if his system does somehow remove R/H and M/C, then there is a distinct possibility that mould spores can be introduced into the living space ! This is not a good idea and again this is why our system always vents to the exterior. It should also be noted that Charniga's general arrangement does not allow "outboard" circulation (ie, along the sheathing and the outer edges of studs and plates) which of course is where most of the mould generating moisture accumulates. Again, our system allows for forced circulation on both inboard and outboard interior faces at all times.
3. Our system does not require any substantial change to the size of standard (2x4 or 2x6) wall framing members in either the new construction or retrofit applications. Both Fitzgibbon and Charniga on the other hand, require significant changes to framing members in the form of notches, grooves, scallops etc... This will most certainly affect the structural capacity of the members in question and therefore upsizing or reinforcement of same will be required. This issue is greatly magnified if one were to try and use either of these systems in a retrofit application. These severe limitations alone are undoubtedly the prime reasons why neither of these systems have ever been used in the wood frame industry.

We agree with your statement: "A search of the prior art has thus far failed to reveal a wall construction having, in addition to the above-noted features, a system for automatically monitoring the relative humidity within a wall cavity, including humidity sensors, display lights and a mechanism for activating a fan in response to a sensor reading which exceeds a predetermined value." However, we do not agree that "the presented claims do not set forth all of these features" because they most certainly are set forth in the Specification and the Figures. These, like any other documented engineering work, *must be read together* to understand the essence of what is being conveyed. When our application is looked at in this way, we think you will agree that there most certainly is "a suggestion as to how the system will control the relative humidity in a cavity." Dealing with your comment specifically then, our system does so in the same way that your "de-humidistat" (or more properly, "humidistat") controls the R/H *in the interior of your own home: it activates a fan which stays on until your desired (ie. pre-set) R/H is achieved and once this has been accomplished, it shuts off the fan.* Our system works in precisely the same fashion except that we are regulating the R/H *in the wall cavity.*

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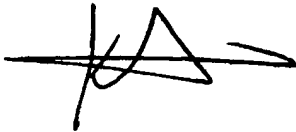
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Generally the object is to keep the R/H in the cavity below 80% (to control mould growth) using interior air that the existing heating and ventilating system maintains at a steady R/H value of roughly 50% to 60%. For your information, we have also recently added a procedure whereby we can measure the amount of moisture the system can extract from the wood itself. This is an additional control measure which allows us to more precisely manage the overall moisture regime in the cavity.

The remainder of your letter deals with minor technical revisions which, I can assure you, we will address in due course. In the interim however, we suggest that it would be in everyone's best interest to first deal with the fundamentals of our application as outlined above. Therefore, we would greatly appreciate receiving your response to same at your earliest convenience.

If you wish to discuss the matter further, please do not hesitate to call the writer directly at any time.

Yours truly,

A handwritten signature in black ink, appearing to be 'Ken Dextras', with a stylized, sweeping flourish extending to the right.

Ken Dextras, P. Eng.
President